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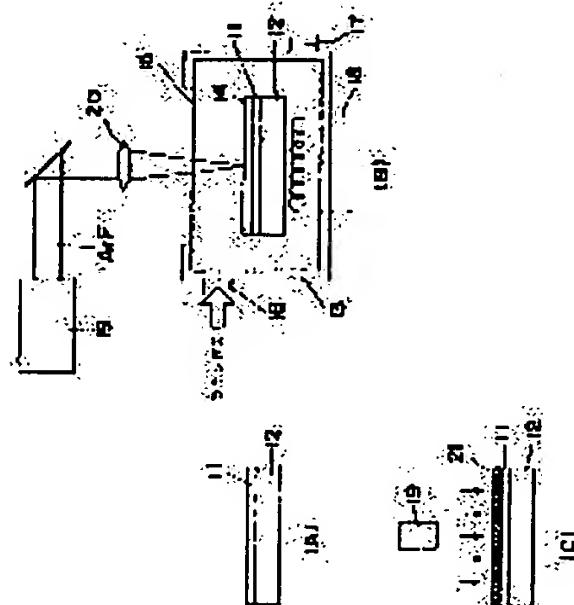
(22) Date of filing : 27.02.1990 (72) Inventor : SAKAI KATSUJI

(54) MANUFACTURE OF POLYSILICON RESISTOR

(57) Abstract:

PURPOSE: To omit a thermal treatment process for removing hydrogen by forming an amorphous silicon film while using a gas containing silicon and an ArF laser as a light source, executing laser annealing onto the surface of the amorphous silicon film and forming a polysilicon film as a resistance layer.

CONSTITUTION: A semiconductor substrate 12, on a surface of which an insulating film 11 composed of silicon nitride (SiN), silicon oxide (SiO₂), etc., is formed through a plasma CVD method, or an insulating substrate is prepared. A silane gas such as monosilane (SiH₄) or disilane (Si₂H₆) or the like is introduced into a furnace 13, and an amorphous silicon film (a-Si) 14 containing no hydrogen (H) is formed onto the surface of the insulating film 11 or the surface of the insulating substrate through an optical CVD method using argon fluoride (ArF) as a light source. Laser annealing by an excimer laser device 19, etc., is executed to the surface of the amorphous silicon film 14, and the surface of the amorphous silicon film 14 is crystallized, thus forming a polysilicon film 21 as a resistance layer. Accordingly, a thermal treatment process for removing hydrogen can be omitted.



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